

REMARKS

Claims 1-6, 8-13, 16-21, and 23 remain pending in this application. Claims 1 and 16 have been amended to more clearly describe the limitations of the claimed invention. No new matter has been added. In view of the above amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

Claims 1-6, 8-12, 16-21, and 23 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,461,321 to Quinn.

Amended claim 1 recites a distal tip for a catheter comprising “first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of a dual lumen catheter” in combination with “a first opening fluidly connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation” and “a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation” along with “a contoured flow deflection element directing, in the reverse mode of operation, outflow from the first opening away from the second opening” and “a contoured outlet portion of the second opening reducing an outflow velocity therefrom in the normal mode of operation” and “*side walls extending between the first opening and the contoured flow deflection element, the side walls being on the same side as the first opening.*”

It is respectfully submitted that Quinn does not teach or suggest “*side walls extending between the first opening and the contoured flow deflection element, the side walls being on the same side as the first opening,*” as recited in amended claim 1. It is respectfully submitted that the “side walls” of claim 1 would be understood by those of ordinary skill in the art to inherently prevent an outflow from the first opening to spill radially around the catheter tip. In contrast, Quinn describes a bolus tip 20 that is coupled to a dual lumen catheter 10. *See Quinn*, col. 5, ll. 28-33. The bolus 20 further includes an arterial port 37 and a venous port 89. An arch 93, opposite venous port 89, curves to join the nose section 57. *See Id.* at col.6, ll. 33-38. The port 89 extends distally beyond the port 37. *See Id.* at Fig. 5. Fig. 8, a cross-sectional view of the bolus 20 between the opening of the port 37 and the beginning of the arch 93, clearly shows that

there are no side walls on the same side as the opening of the port 37. Rather, a septum 58 appears to be completely flat and would thus be unable to prevent any radial spilling from the port 37. Indeed, the Examiner is mistaken in stating that Quinn “discloses” that reference character 37 or 98 as a sidewall. Quinn does nothing of the sort, since reference character 37 is identified as an arterial port, and reference character 98 is identified as an arch. Tellingly, the reference arrows in Fig. 5 associated with reference characters 37 and 20 indicate that no side walls “extend between the first opening and the contoured flow deflation element...” The arrow associated with reference character 37 point to the bottom of the U-shaped trough, indicating that this is where the port 37 ends. The arrow associated with reference character 20 (the bolus) points to the region the connect tip immediately distal of the port 37. Thus, the port 37 transitions to the bolus 20 immediately, without there being any intermediary sidewalls.

Therefore, it is respectfully submitted that claim 1 is not anticipated by Quinn and is thus allowable. Because claims 2-6 and 8-12 depend from and include all of the limitation of claim 1, it is respectfully submitted that these claims are also allowable.

Similarly, claim 16 recites a flow control tip for a multi-lumen catheter comprising “an attachment portion adapted to fluidly connect to a distal portion of a catheter” in combination with “a contoured bolus defining at least a portion of an inlet and an outlet of the distal tip so that, when coupled to the catheter, the inlet is coupled to a first one of the catheters lumens and the outlet is coupled to a second one of the catheters lumens, and a flow deflector directing fluids exiting the inlet in a first mode away from the outlet and *side walls on the same side as the inlet extending between the inlet and the bolus*, wherein the contoured bolus defines a specified stagger distance between the inlet and the outlet.”

For the same reasons as discussed above in regard to claim 1, it is respectfully submitted that claim 16 is not anticipated by Quinn. Specifically, Quinn does not show or suggest “*side walls on the same side as the inlet extending between the inlet and the bolus*,” as recited in claim 16. Therefore, it is respectfully submitted that claim 16 is allowable. Because claims 17-21 and 23 depend from and include all of the limitations of claim 16, it is respectfully submitted that these claims are also allowable.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Quinn in view of U.S. Patent No. 5,171,216 to Dasse et al. (“Dasse”). The Examiner states that Quinn discloses the device substantially as claimed, but does not disclose that the stagger distance between the

openings is between 1 and 1.5cm. The Examiner cites Dasse to cure this deficiency. However, it is respectfully submitted that Dasse does not cure the above-described deficiencies of Quinn.

As shown in Fig. 2B of Dasse, infusion and withdrawal ports 14 and 16 are simply formed in and flush with a side surface of a multi-lumen tube 2. Thus, there are no side extensions or other structures for preventing outflow from either of the ports 14, 16 from spilling radially around the tube 2. Thus, it is respectfully submitted that Dasse neither discloses nor suggests "*side walls extending between the first opening and the contoured flow deflection element, the side walls being on the same side as the first opening,*" as recited in claim 1. Therefore, because claim 13 depends from includes all of the limitations of claim 1, it is respectfully submitted that this claim is also allowable.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Dated:

5/10/07

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